



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,054	09/12/2003	Thomas Kheng G. Peh	70020976-1	6729

7590 12/28/2005  
AGILENT TECHNOLOGIES, INC.  
Legal Department, DL429  
Intellectual Property Administration  
P.O. Box 7599  
Loveland, CO 80537-0599

EXAMINER
----------


QUINTO, KEVIN V

ART UNIT	PAPER NUMBER
----------	--------------

2826

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/661,054	<b>Applicant(s)</b> PEH, THOMAS KHENG G.	
	<b>Examiner</b> Kevin Quinto	<b>Art Unit</b> 2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 11 October 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7, 9, 10, 19 and 20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 9, 10, 19, and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

1. The rejection of claim 10 under 35 USC § 112 has been withdrawn in light of the remarks filed on October 11, 2005. However claim 10 has been rejected under 35 USC § 102 using the Ishinaga reference (USPN 6,355,946 B1) and the Matsubara reference (USPN 6,642,547 B2). See below under *Claim Rejections - 35 USC § 102*.
2. In reference to the applicant's argument concerning the Ishinaga reference (USPN 6,355,946 B1), the applicant states that Ishinaga does not disclose a molded encapsulation layer which is "shaped to direct light such that the molded encapsulation layer reduces a difference in beam divergence between a fast-axis and a slow-axis." However figure 2 of Ishinaga clearly shows an elliptically shaped cup which leads to an elliptically shaped encapsulation layer. Furthermore no structural difference has been pointed out between the applicant's claimed invention and the Ishinaga reference to show how the molded encapsulation layer is "shaped to direct light such that the molded encapsulation layer reduces a difference in beam divergence between a fast-axis and a slow-axis." In addition such claim language falls under the domain of intended use (see below under *Claim Rejections - 35 USC § 102*). With regard to the applicant's argument concerning Matsubara et al. (USPN 6,642,547 B2), the applicant states that the molded encapsulation layer is different from the encapsulation layer of Matsubara in that it is "shaped to direct light such that the molded encapsulation layer reduces a difference in beam divergence between a fast-axis and a slow-axis."

However no structural difference has been pointed out between the applicant's claimed invention and the Matsubara reference to show how the molded encapsulation layer is "shaped to direct light such that the molded encapsulation layer reduces a difference in beam divergence between a fast-axis and a slow-axis." Again, such claim language falls under the domain of intended use (see below under *Claim Rejections - 35 USC § 102*).

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 3, 5, 7, 9, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishinaga (USPN 6,355,946 B1).

5. In reference to claim 1, Ishinaga (USPN 6,355,946 B1) discloses a similar device. Figures 1-4 of Ishinaga illustrate an integrated optical emitter device with a substrate (1A). An emitter (3A) is mounted to the substrate (1A). Figure 2 shows that an elliptical molded cup (5) surrounds the emitter and is bonded to the substrate (1A). A molded encapsulation layer (50) is bonded to the elliptical molded cup (5). The

Art Unit: 2826

examiner notes the limitation regarding the beam divergence. The applicant has disclosed that an elliptically shaped cup enables an elliptically shaped lens which reduces a difference in beam divergence between a fast-axis and a slow-axis (p.5, paragraph 16 of the current specification). However a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. The molded encapsulation layer (50) is elliptical since the cup in which it is formed is elliptical; therefore Ishinaga meets this limitation.

6. In reference to claim 3, the emitter (3A) is a surface-emitting diode.

7. With regard to claim 5, the molded cup (5) is at least semi-reflective (column 5, lines 11-12).

8. In reference to claim 7, the molded encapsulation layer is elliptical since the cup in which it is formed is elliptical.

9. In reference to claim 9, Ishinaga discloses that the encapsulation layer is made of transparent epoxy (column 4, lines 25-29).

10. With regard to claim 10, it is understood that the molded cup (5) of Ishinaga is not perfectly smooth and therefore has discrete transitions.

11. Claims 1, 2, 3, 5, 7, 9, and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Matsubara et al. (USPN 6,642,547 B2).

12. In reference to claim 1, Matsubara et al. (USPN 6,642,547 B2, hereinafter referred to as the "Matsubara" reference) discloses a similar device. Figures 7A, 7B,

Art Unit: 2826

7C, and 7D of Matsubara each illustrate an integrated optical emitter device with a substrate (3). An emitter (5) is mounted to the substrate (3). A molded cup (8) surrounds the emitter (5) and is bonded to the substrate (3). A molded encapsulation layer (7) is bonded to the molded cup (8). The examiner notes the limitation regarding the beam divergence. However a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. The difference in beam divergence between the fast-axis and the slow-axis is reduced since Matsubara makes it clear that light parallel to the substrate surface (3), or in the slow-axis direction, is radiated (3) perpendicular to the substrate surface, or in the fast-axis direction, due to the cup (column 8, lines 4-10) thereby meeting the claim.

13. With regard to claim 2, Matsubara makes it clear that the substrate (3) is a printed circuit board (column 7, lines 36-40).

14. In reference to claim 3, the emitter (5) is a surface-emitting diode.

15. In reference to claim 5, the cup (8) is at least semi-reflective (column 7, lines 20-30).

16. With regard to claim 7, the encapsulation layer (7) has an elliptical shape as seen in figures 7A, 7B, 7C, and 7D.

17. With regard to claim 9, the encapsulation layer (7) is formed from clear epoxy (column 7, lines 48-50).

Art Unit: 2826

18. With regard to claim 10, it is understood that the molded cup (8) of Matsubara is not perfectly smooth and therefore has discrete transitions.

***Claim Rejections - 35 USC § 103***

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishinaga (USPN 6,355,946 B1) in view of Fukasawa et al. (USPN 6,638,780 B2).

21. In reference to claim 4, Ishinaga discloses that the encapsulation layer is made of molded epoxy (column 4, lines 25-29) but does not discuss using epoxy for the reflective cup. However the use of epoxy as a reflective cup is well known in the art. Fukasawa et al. (USPN 6,638,780 B2, hereinafter referred to as the "Fukasawa" reference) discloses the use of a reflective epoxy cup in conjunction with a transparent epoxy material in an LED (column 2, lines 46-51, 67 and column 3, lines 1-4) helps to avoid defects related to the adhesion process such as damage to bonding wires, and peeling of the LED (column 1, lines 40-43). In view of the benefits disclosed by Fukasawa, it would therefore be obvious to use epoxy as the material for the reflective cup in Ishinaga.

Art Unit: 2826

22. Claims 4, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsubara et al. (USPN 6,642,547 B2) in view of Fukasawa et al. (USPN 6,638,780 B2).

23. In reference to claim 4, Matsubara discloses that the encapsulation layer is made of molded epoxy (column 7, lines 48-50) but does not discuss using epoxy for the reflective cup. However the use of epoxy as a reflective cup is well known in the art. Fukasawa (USPN 6,638,780 B2) discloses the use of a reflective epoxy cup in conjunction with a transparent epoxy material in an LED (column 2, lines 46-51, 67 and column 3, lines 1-4) helps to avoid defects related to the adhesion process such as damage to bonding wires, and peeling of the LED (column 1, lines 40-43). In view of the benefits disclosed by Fukasawa, it would therefore be obvious to use epoxy as the material for the reflective cup in Matsubara.

24. In reference to claim 19, Matsubara (USPN 6,642,547 B2) discloses a similar device. Figures 7A, 7B, 7C, and 7D of Matsubara each illustrate an integrated optical emitter device (5) mounted to a printed circuit board or PCB (3). A molded cup (8) surrounds the emitter (5) and is bonded to the PCB (3). A molded epoxy encapsulation layer (7) is bonded (column 7, lines 48-50) to the molded cup (8). The difference in beam divergence between the fast-axis and the slow-axis is reduced since Matsubara makes it clear that light parallel to the substrate surface (3), or in the slow-axis direction, is radiated (3) perpendicular to the substrate surface, or in the fast-axis direction, due to the cup (column 8, lines 4-10). Matsubara does not discuss using epoxy for the cup. However the use of epoxy as a reflective cup is well known in the art. Fukasawa



Art Unit: 2826

(USPN 6,638,780 B2) discloses the use of a reflective epoxy cup in conjunction with a transparent epoxy material in an LED (column 2, lines 46-51, 67 and column 3, lines 1-4) helps to avoid defects related to the adhesion process such as damage to bonding wires, and peeling of the LED (column 1, lines 40-43). In view of the benefits disclosed by Fukasawa, it would therefore be obvious to use epoxy as the material for the reflective cup in Matsubara.

25. With regard to claim 20, the encapsulation layer (7) has an elliptical shape as seen in figures 7A, 7B, 7C, and 7D.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quinto whose telephone number is (571) 272-1920. The examiner can normally be reached on M-F 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

Application/Control Number: 10/661,054

Page 9

Art Unit: 2826

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KVQ

  
JONATHAN J. FELSON  
PERMISSORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800